Remarks

Claims 1-107 are pending, and claims 1-107 stand rejected. Claims 1-107 are cancelled without prejudice by this response. Claims 118-127 are added by this response and do not constitute new matter. Applicants respectfully traverse the rejection and request allowance of claims 118-127.

The Examiner rejected claims 1-107 under 35 USC § 102 and 35 USC § 103 in view of U.S. Patent number 5,825,780 (Christie). The Applicants cancelled claims 1-107 and added claim 108-127 that are novel and non-obvious in view of Christie. Christie teaches a communication control processor (CCP) that processes signaling and controls network elements. However, Christie does not teach how the CCP is controlled. Christie mentions that the CCP receives operational control (see FIG. 5; column 13, lines 21-25), but does not describe the system that provides the operational control. Claim 108 describes a call processing control system that updates call processing tables in the signaling processors. Christie does not teach a system that updates call processing tables in the CCP. Therefore, claim 108 is novel and non-obvious in view of Christie. Claim 118 is novel and non-obvious for similar reasons. The dependent claims are novel and non-obvious as being dependent on a novel and non-obvious independent claim.

The Applicants submit that there may be additional reasons in support of patentability, but that such reasons are moot in light of the above remarks and are omitted in the interests of brevity. The Applicants respectfully request allowance of claims 108-127.

Any fees in addition to those submitted may be charged to deposit account 21-0765.

Respectfully submitted,

Date: 9-20-02

Brett L. Bornsen, Reg. No.: 46,566

Tel. No.: 303-546-1300
Fax No.: 303-499-5426

CORRESPONDENCE ADDRESS: **Customer No.: 028004**

Version with Markings to Show Changes Made

In the Specification

The following represent marked-up versions of the amendments made to the specification.

The paragraph on page 10, beginning on line 17:

The CPCS 104 accepts call processing data, such as the translations, from operations systems and updates data in call processing tables in the signaling processors 106 and 110. The CPCS 104 maintains a current, historical, and future view of the call processing tables. The CPCS 104 also provides configuration data and control to the elements of the call processing system 102 including [to] the signaling processors 106 and 110 and the connection systems 108 and 112 and collects data from the elements.

The paragraph on page 14, beginning on line 6:

The operations system 210 transports translations for the call processing tables and other call-associated data to the CPCS 104. In addition, the operations system 210 accepts call-associated data from the CPCS 104. The operations system 210 comprises, for example, an alarm monitoring system that receives alarm data, an operations report system to receive trending data, an accounting system to receive accounting data, or a configuration system to transmit call processing translations or element configuration data to the CPCS 104. The operations system 210 may comprise other elements.

The paragraph on page 16, beginning on line 11:

The call processor 204 also sends call information elements to the signaling interface 202 [over the link 120] destined for another communication device, for example, identifying the selected connection 218 over which the user communications are to be connected. The other communication device may be, for example, another call processor or a switch which may handle call signaling.

The paragraph on page 17, beginning on line 12:

It will be appreciated that a call can be connected in the opposite direction from the ATM side to the TDM side. Also, a call can be switched from an ATM system to another ATM system or from a TDM system to another TDM system. It will be appreciated that the call processor or switch on the terminating side of the call also transmits ECDBs to the CPCS 104 during the call for setup and termination.

The paragraph on page 19, beginning on line 1:

The fault management system 306 manages alarm data, fault data, and other performance data from the signaling interface 202, the call processor 204, the interworking unit 206, and the ATM matrix 208. Initially, the signaling interface 202, the interworking unit 206, and the ATM matrix 208 report the performance data to the call processor [304] 204 so that the processing tables can be updated. The call processor [304] 204 then forwards the performance data to the CPCS 104, and the fault management system 306 configures the data in a reportable format. The fault management system 306 insures that the CPCS 104 broadcasts the alarm, fault, and other performance data to the required support systems, such as the network management system 324. Parameters for the required broadcast systems are configurable based upon an individual fault or alarm number or classification.

The paragraph on page 23, beginning on line 12:

The call trace system 502 verifies the data for the call processing tables directly at the call processor 204 to ensure that the call processor and the CPCS 104 are synchronized. (See Figure 3.) For example, in a first function the call trace system 502 can traverse the call processing tables in the CPCS 104 based on data input by an operator. In another function a selected set of parameters determines if the call processor 204 and the CPCS 104 are synchronized. Automated routines ensure that synchronization and any out of synchronization conditions are reported as an alarm. In a third function the CIB data can be retrieved for review of SS7 routing information, the interworking unit connection information, the ATM matrix connection information, and other data that is used to determine quality of service on historical calls.

The paragraph on page 24, beginning on line16:

The active call file database 512 contains the history of all the [all] calls, including the call processor or switch, the calling number, the called number, the path, the equipment used to connect the calls, and echo canceller data. For example, the CIB file contains the exact number of the echo canceller for the call, if used, the exact connections, and the exact signaling links used. Therefore, by querying the active call file database 512, a specific call can be determined and the exact information for the call examined to determine loss of quality or other concerns for calls. This function is a significant advance over prior systems that are manual and employ a hit or miss strategy.

The paragraph on page 32, beginning on line 19:

The matrix 906 is a controllable ATM matrix that provides cross connect functionality in response to control messages from the signaling processor 912. The matrix 906 has access to virtual path/virtual channels (VP/VCs) over which it can connect calls. For example, a call can come in over a VP/VC through the OC-M/STS-M interface 908 and be connected through the matrix 906 over a VP/VC through the OC-X/STS-X interface 910 in response to a control message received. by the signaling processor 912 through the control interface 904. Alternately, a call can be connected in the opposite direction. In addition, the [a] call can be received over a VP/VC through the OC-M/STS-M interface 908 or the OC-X/STS-X interface 910 and be connected through the matrix 906 to a different VP/VC on the same OC-M/STS-M interface or the same OC-X/STS-X interface.

In the Claims

The following represent marked-up versions of the amendments made to the claims. All of the claims are presented, amended or not, in order to avoid confusion in the event of future prosecution.

108. (New) A communication system, comprising:

a plurality of signaling processors, wherein each of the signaling processors includes a call processing table and each of the signaling processors is configured to receive signaling, process the signaling based on the call processing table to select an identifier for routing a call, and transmit a control message identifying the selected identifier;

a plurality of connection systems configured to receive user communications for calls, receive control messages that include identifies for routing the calls, and interwork the user communications based on the identifiers in the control messages; and

a call processing control system coupled to the signaling processors and configured to receive call processing data and update the call processing tables in the signaling processors based on the call processing data.

109. (New) The communication system of claim 108 wherein the call processing control system comprises:

a human machine interface configured to provide an interface for an operator to enter the call processing data to adjust the call processing tables.

110. (New) The communication system of claim 109 wherein the call processing control system comprises:

a user security configuration system configured to allow selected operators to enter the call processing data to update the call processing tables.

111. (New) The communication system of claim 108 wherein the call processing control system receives the call processing data from an operations center.

112. (New) The communication system of claim 108 wherein the call processing control system comprises:

a regional craft view system configured to allow an operations center to view configurations of the signaling processors.

113. (New) The communication system of claim 108 wherein the call processing tables include a called number table.

114. (New) The communication system of claim 108 wherein the call processing tables include a routing table.

115. (New) The communication system of claim 108 wherein the call processing tables include an automatic number identification table.

116. (New) The communication system of claim 108 wherein the connection systems are configured to interwork the user communications between non-asynchronous transfer mode (ATM) connections and asynchronous transfer mode (ATM) connections based on the identifiers in the control messages.

117. (New) The communication system of claim 108 wherein the connection systems are configured to interwork the user communications between time division multiplexed (TDM) connections and asynchronous transfer mode (ATM) connections based on the identifiers in the control messages.

118. (New) A method of operating a communication system comprising a plurality of signaling processors, a plurality of connection systems, and a call processing control system, the method comprising:

in each of the signaling processors, receiving signaling, processing the signaling based on a call processing table to select an identifier for routing a call, and transmitting a control message identifying the selected identifier;

in the plurality of connection systems, receiving user communications for calls, receiving

control messages that include identifies for routing the calls, and interworking the user communications based on the identifiers in the control messages; and

in the call processing control system, receiving call processing data and updating the call processing tables in the signaling processors based on the call processing data.

119. (New) The method of claim 118 wherein the call processing control system further comprises a human machine interface, the method further comprising:

in the human machine interface, providing an interface for an operator to enter the call processing data to adjust the call processing tables.

120. (New) The method of claim 119 wherein the call processing control system further comprises a user security configuration system, the method further comprising:

in the user security configuration system, allowing selected operators to enter the call processing data to update the call processing tables.

121. (New) The method of claim 118 wherein receiving the call processing data comprises:

receiving the call processing data from an operations center.

122. (New) The method of claim 118 wherein the call processing system further comprises a regional craft view system, the method further comprising:

in the regional craft view system, allowing an operations center to view configurations of the signaling processors.

123. (New) The method of claim 118 wherein the call processing tables include a called number table.

124. (New) The method of claim 118 wherein the call processing tables include a routing table.

125. (New) The method of claim 118 wherein the call processing tables include an automatic number identification table.

126. (New) The method of claim 118 wherein interworking the user communications comprises:

interworking the user communications between non-asynchronous transfer mode (ATM) connections and asynchronous transfer mode (ATM) connections based on the identifiers in the control messages.

127. (New) The method of claim 118 wherein interworking the user communications comprises:

interworking the user communications between time division multiplexed (TDM) connections and asynchronous transfer mode (ATM) connections based on the identifiers in the control messages.